IND-1

Comment 1
The pipeline alignment was established through the FERC process. Therefore, relocation of the project to another landowner would require FERC approval. Negotiations between individuals and the applicant regarding payment for easements or damages are beyond the scope of the Draft SEIS.

IND-2

Comment 1

Comment noted.

IND-3

Comment 1

Please refer to Sections 3.5.6 through 3.5.9 of the Draft SEIS for discussions of how impacts to plants and animals would be mitigated. Section 3.5.10 specifically addresses potential impacts to significant forest stands.

Comment 2

Comment noted.

IND-4

Comment 1

The Terasen Gas Alternative was presented in Section 2.3 of the Draft SEIS. It was included in the Draft SEIS because it is considered by Ecology to be a viable alternative.

Comment 2

See Comment 1.

Comment 3

Comment noted.

Comment 4

The Department of Ecology must certify that the proposed project will comply with the Washington State Coastal Zone Management Program and the requirements of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451).

Comment 5

The Washington State Department of Natural Resources (DNR) is responsible for the management of state-owned aquatic lands, and specifically the aquatic lands affected by the GSX-US pipeline right-of-way. DNR is currently in the process of establishing the Cherry Point area as a state Aquatic Reserve and preparing the Cherry Point Management Plan and accompanying supplemental environmental impact statement. A scoping meeting for the EIS was held on October 22, 2003. A public meeting to review the Draft SEIS will be held, if necessary, on January 15, 2004. The full public hearing on the proposed management plan and Draft SEIS is scheduled for January 26, 2004. More information on the Cherry Point Management Plan is available from Dave Palazzi, DNR Aquatic Reserves Manager, at (360) 902-1069.

Comment 6

Although the specific issue raised in your comment is outside the scope the Draft SEIS established by Ecology, a discussion of geologic and soil conditions at the Cherry Point Landfall can be found in Section 3.1.3 of the FERC Final EIS.

Comment 7

Section 3.12 of the Draft SEIS contains a summary of two additional noise studies conducted by GSX-US since publication of the FERC Final EIS. Complete copies of those studies can be obtained at Ecology's Northwest Regional Office in Bellevue, Washington. Additional noise analyses are contained in Section 3.12.2 of the FERC Final EIS and Resource Report 9 – Air and

Noise Quality. The Resource Report is also available for review at Ecology's Northwest Regional Office.

Comment 8

See Comment 7.

Comment 9

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 10

Your inclusion of the letter from the Commissioner of the Connecticut Department of Environmental Protection is noted for the record.

IND-5

Comment 1

You are correct that the stated objective of the project is to provide a transportation system for natural gas to Canadian electrical generation facilities that will meet the growing demand for electrical power on Vancouver Island, Canada.

Comment 2

Your comments regarding the potential benefits of the Terasen Gas alternative are noted. With regard to market demand on Vancouver Island, that question will be addressed through the process recently initiated by BC Hydro in response to the September 8, 2003 ruling of the British Columbia Utilities Commission (BCUC). In its ruling, the BCUC denied the Application for Certificate of Public Convenience and Necessity (CPCN) by the Vancouver Island Energy Corporation (VIEC) for the Vancouver Island Generation Project (VIGP). The VIGP called for construction of a gas-fired generation plant at Duke Point near Nanaimo. The gas for that generation plant would be supplied by the GSX-US pipeline. The denial of the CPCN was the result of the BCUC's inability to conclude that the VIGP proposal was the most cost-effective alternative for BC Hydro customers.

In response to the BCUC ruling, BC Hydro issued a "Call For Tenders" (CFT) on October 31, 2003. Under that process, BC Hydro will accept and evaluate new proposals for energy and generation and supply. An Independent Reviewer will review and evaluate the proposals and recommend a preferred option. At publication of this Final SEIS, 23 bidders had registered. Some bidders are proposing new sources of power, whereas others would likely be interested in assuming control of VIGP's assets and completing a gas-fired plant similar to VIGP. This process is expected to be complete by the end of September 2004. For more information on the CFT process, visit the BC Hydro Website: https://www.bchydro.com/info/ipp/ipp8467.html.

Comment 3

In Section 3.7, the Draft SEIS acknowledged the project's location within the Cherry Point Urban Growth Area (UGA) and Whatcom County's designation of these lands for future industrial development.

Comment 4

Comment noted. A comprehensive analysis of cumulative impacts of the GSX-US and BP Cherry Point projects was outside the scope of issues identified by Ecology for the Draft SEIS. However, Section 3.10 of the Draft SEIS (Traffic and Transportation) does address potential cumulative impacts related to vehicle traffic, particularly construction traffic. Cumulative impacts were also addressed in Section 3.14 of the FERC Final EIS.

Comment 5

Comment noted.

Comment 6

Comment noted.

IND-6

Comment 1

The South Fork of Dakota Creek is proposed for HDD. Therefore, disturbance to the stream or riparian zone is not anticipated. Mitigation to prime farmland soils is described in GSX-US's Upland Erosion Control, Revegetation and Maintenance Plan provided in Appendix C of the FERC Final EIS. Mitigation includes restoration of agricultural drainage systems, topsoil segregation, compaction relief, and removal of rocks greater than four inches diameter from surface soils.

Comment 2

Comment noted. The FERC maintains an Enforcement Hotline that can be used by the public to file complaints regarding a regulated natural gas company. The Enforcement Hotline's toll free number is 1-888-889-8030. In addition, the applicant is required to administer and maintain a landowner complaint resolution program during project implementation. All landowner complaints must be reported to FERC along with the resolution or proposal to resolve the complaint.

IND-7

Comment 1

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

IND-8

Comment 1

Comment noted.

Comment 2

Literature reviewed by GSX-US in preparation of its application to FERC is cited in Resource Report 3 – Fish, Wildlife and Vegetation, pages 3-45 through 3-51. Appendix 3-1 to Resource Report 3 is a report entitled, "Nearshore Marine Habitat Survey and Review of Existing Information of Marine Biology and Fisheries Resources." This report, commissioned by GSX-US and authored by Chris Fairbanks and Mary Terra of Duke Engineering and Services reviews many reports specific to Cherry Point, including several authored by M.A. Kyte. The Resource Report is available for review at Ecology's Northwest Regional Office (3190 160th Avenue SE, Bellevue, WA 98008-5452).

Comment 3

GSX-US commissioned a report titled "Nearshore Marine Habitat Survey of the Gulf Road Site and Additional Information for the Cherry Point Landfall" authored by Chris Fairbanks and Mary Terra of Duke Engineering and Services. This report, summarized on page 3-54 of the FERC Final EIS, identifies the three bands of marine vegetation in the nearshore area at Gulf Road. As described in the FERC Final EIS the vegetation extending from a depth of +3 feet to -2 foot MLLW was uniform across the survey area. Observed vegetation included low growing algae (*Ulva*, *Porphyra*, *Iridaea*, and *Fucus*). The substrate in Band 1 consisted of boulders and cobbles. The use of the term rock beach is intended to be interchangeable with boulders and cobbles.

Comment 4

See Comment 3. The two marine vegetation studies referenced above provide site-specific information for the proposed landfall and Gulf Road pipestring launch site. The applicant has not proposed a major disturbance at either site. The nearshore environment at the landfall will be avoided with the use of a horizontal directional drill (HDD). The activity proposed at the end of Gulf Road would involve only the temporary placement of pipe support rollers on the beach. No grading, excavation or removal of cobbles or gravels is proposed.

Comment 5

Comment noted. Section 3.7 of this Final SEIS includes a discussion of the proposed Cherry Point Aquatic Reserve and an overview of the process for environmental review.

IND-9

Comment 1

Please refer to Letter IND-5, Comment 2.

Comment 2

Comment noted.

Comment 3

Comment noted.

Comment 4

Comment noted. Section 2.4.1 of the Draft SEIS contained an overview of the NorskeCanada Energy Project.

Comment 5

Comment noted.

Comment 6

The discussion of leak detection limits in both the Draft SEIS and the NEB review focused on a sensitivity level of 1% of the total throughput of the pipeline. As noted in the Draft SEIS, the system is still in the early stages of design and would require calibration and fine-tuning once the pipeline is operational. The numbers presented are design parameters that represent the minimum sensitivity that could be expected. Once the system is actually calibrated and fine-tuned for the pipeline, the sensitivity threshold be lower. Also, the leak detection system is only one method of identifying leaks. Many other system controls and maintenance activities will be in place that will also assist in detecting leaks.

The reference in the NEB review to nine (9) hours to empty the pipeline in the event of a rupture was based on the worst case assumption that a full severing of the marine pipeline would occur near one end of the marine section and that the valves on either side of the marine section would then be closed and the pipeline allowed to empty through the severed pipeline and into the water. In reality, GSX-US would likely isolate the section and then vent the gas to the atmosphere at the valves on either side of the marine section. This would greatly reduce the time to empty the pipeline and greatly limit the amount of gas released to the marine environment.

IND-10

Comment 1

Section 3.5.4 of the Draft SEIS contained additional analysis of potential impacts and mitigation measures related to the sea bottom and bottom trawling.

Comment 2

Comment noted.

IND-11

Comment 1

Please refer to Letter IND-5, Comment 2.

Comment 2

The Terasen Gas alternative was described in Section 2.3 of the Draft SEIS.

Comment 3

Ecology does not agree that 401 and CZM permitting processes were waived, nor that deadlines were missed. While GSX-US has filed a petition with FERC with such allegations, FERC has not ruled that 401 and CZM permitting processes were waived.

Comment 4

Section 3.7 of the Draft SEIS acknowledges that the GSX-US pipeline would cross the Cherry Point Major Port/Industrial UGA.

Comment 5

The focus of the issue identified by Ecology for discussion in Section 3.2 of the Draft SEIS was the proponent's claim about the crossing of onshore faults. That is why Figure 3-1, which shows the pipeline crossing the Sumas and Vedder Faults, was included. However, the discussion under Affected Environment also acknowledges the presence of numerous potentially active faults within the marine waters of the Canadian Gulf Islands. Those faults were also documented in Section 3.1 of the FERC Final EIS and the Environmental Assessment for the GSX-US-Canada portion of the project.

Comment 6

Please refer to Section 3.5.9 of the Draft SEIS, which summarizes previous studies of raptors and the WDFW Bald Eagle Management Plan. One bald eagle nest is located within 0.5 miles of the proposed pipeline route in the vicinity of California Creek. The proposed pipeline would be 60 feet from the nest tree.

Comment 7

Stream crossing methods proposed for Tarte Creek and Campbell Creek were developed in consultation with biologists from WDFW familiar with the fisheries resources in those streams. The applicant has been in contact with the USDA Natural Resources Conservation Service (NRCS) regarding salmon habitat restoration and there are no identified conflicts between restoration projects and the pipeline. The U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries have provided concurrence letters based on the proposed crossing methods. Mitigation

for each stream crossing is detailed in the applicant's Wetland and Riparian Restoration Plan. The size of this document and number of streams crossed precluded a discussion in the Draft SEIS of mitigation at each stream crossing. Regulatory agencies are currently reviewing the Plan in concert with stream and wetland crossing permits.

IND-12

Comment 1

Your comment in support of the proposed project is noted.

ORG-1

Comment 1

Please refer to Letter IND-5, Comment 2.

Comment 2

Potential impacts to the pipeline from geologic hazards was addressed in Section 3.1.2 of the FERC Final EIS. Additional discussion is contained in Section 3.2 of the Draft SEIS. Please refer to Letter IND-9, Comment 6 for a discussion of measures to mitigate potential pipeline rupture. Additional discussion of pipeline safety measures is included in Section 3.6 of the Draft SEIS.

Comment 3

Please refer to revised Section 3.12 – Noise in this Final SEIS. The USFWS and NOAA Fisheries have written concurrence letters reflecting completion of the consultation process.

Comment 4

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 5

See Comment 4, above.

Comment 6

Please refer to Section 3.6 of the Draft SEIS and Section 3.13 of the FERC Final EIS for discussions of measures to ensure pipeline safety.

Comment 7

The USFWS and NOAA Fisheries have written concurrence letters reflecting completion of the consultation process.

Comment 8

Potential impact to nearshore habitat was not identified by Ecology as a specific issue to be addressed in the Draft SEIS. However, potential nearshore impacts associated with the HDD at Cherry Point are discussed in Section 3.3.9. Impact to nearshore habitat was also assessed in Section 3.7.1 of the FERC Final EIS.

Comment 9

The proposed GSX-US pipeline is not expected to result in impacts to aerial or marine navigation. Impacts to marine navigation are discussed on pages 3-112 to 3-117 of the FERC Final EIS.

Comment 10

Comment noted.

ORG-2

Comment 1

Comment noted.

Comment 2

Comment noted. Please refer to Letter IND-5, Comment 2.

Comment 3

Comment noted.

Comment 4

Comment noted.

Comment 5

Comment noted.

Comment 6

Comment noted.

Comment 7

Comment noted.

Comment 8

Comment noted.

Comment 9

Comment noted.

Comment 10

Comment noted.

ORG-3

Comment 1

Your recommendation regarding Ecology's action on the water quality certification is noted for the record.

Comment 2

Although your comment on the FERC Final EIS is outside the scope of issues established for the Draft SEIS, please refer to Section 2 of the Draft SEIS for a discussion of project alternatives.

Comment 3

Comment noted.

Comment 4

Your comment in support of the Draft SEIS is noted for the record.

Comment 5

Please refer to Section 3.5.7 of the Draft SEIS for a discussion of the proposed compensatory wetland mitigation plan. Potential impacts to nearshore habitat are discussed in Sections 3.3 and 3.5 of the Draft SEIS. Potential impact to orca whales is outside the scope of the issues identified by Ecology for the Draft SEIS. However, impacts to marine mammals were addressed in Sections 3.5.2 and 3.8.2 of the FERC Final EIS.

Comment 6

Please refer to Section 3.3.4 of the Draft SEIS. GSX-US is not requesting approval for an "Open Cut" alternative because the horizontal directional drill (HDD) method is the method that will be used to install the shore crossing for the Georgia Strait Crossing Project near Cherry Point Washington. Based on its own extensive studies, GSX-US has concluded that the HDD shore approach at Cherry Point is achievable with nearly 100% probability of success and is the primary and preferred method to construct the GSX-US Pipeline shore crossing.

Comment 7

It is important to note that the referenced incident involved a liquids pipeline, which has different characteristics than a natural gas pipeline. However, the discussion concerning GSX-US plans for leak detection and mainline valves in Section 3.6.2 of the Draft SEIS incorporated lessons learned from that event. For example, "With the exception of the valves at Cherry Point and Sumas, local operations personnel must physically operate the valves. The valves at Cherry Point and Sumas could be closed by remote operators from the gas control center in Salt Lake City or

manually by local operations personnel." All valves will be required to be opened manually by local operations personnel.

Comment 8

Energy use and conservation was not within the scope of the issues identified by Ecology for analysis in the Draft SEIS and, therefore, will not be addressed in the Final SEIS.

Comment 9

BC Hydro does not own or operate any gas pipelines. Williams currently owns two interstate natural gas transportation pipelines. The responses below outline the requested information from the date the respective pipelines were purchased by Williams to present. This response is limited to the natural gas pipelines owned by Williams.

Williams Gas Pipelines

1982 -- Williams purchased Northwest Energy Company, which included the system that now operates as Northwest Pipeline Corporation (Northwest Pipeline).

- *Northwest Pipeline*: The 3,900 mile system transports natural gas from major basins in western Canada, Wyoming, Colorado and New Mexico to markets in the Pacific Northwest and Intermountain West.

1995 -- Williams acquired Transco Energy Company, which ownership included a major natural gas transportation system in the eastern half of the United States: Transcontinental Gas Pipeline Corporation (Transco).

- *Transco*: The 10,500-mile system transports natural gas from the Gulf Coast to markets in the eastern and southeastern states.

Safety Facts

The Department of Transportation's Office of Pipeline Safety defines an "incident" as:

- An event that involves a release of gas, and;
- The combination of the value of the lost gas, the cost to repair or replace the section of pipeline and any property damage exceeds $50,000, or;
- Results in an injury.

Northwest Pipeline - Reportable Incidents Since Williams Acquisition (1982 to Present)

- One company death and two company injuries (associated with the same incident). No public injury associated with the operation or maintenance of the facility from the time the pipeline was placed in to service.

- 29 DOT reportable incidents from 1982 to Present

  Reportable Leaks – 6 total

  Material & Construction – 6

  Reportable Ruptures – 23 total

  Material – 5
  Landslides – 9
  Corrosion –1
  Stress, Corrosion, Cracking – 2
  Operator Error - 1
  Other – Third Party – 5

Transco - Reportable Incidents Since Williams Acquisition (1995 to Present)

- No public injury associated with the operation or maintenance of the facility from 1995 to present.

- 7 DOT reportable incidents from 1995 to present

Onshore Pipelines – 5 Reportable Incidents

Reportable Leaks – 4
Third Party Damage - 2
Material – 2

Reportable Ruptures – 1
Third Party Damage – 1

Offshore Pipelines – 2 Reportable Incidents

Reportable Leaks – 1
Material – 1

Reportable Ruptures – 1
Material – 1

ORG-4

Comment 1

Comment noted.

Comment 2

The purpose of the SEIS is not to recommend, or presume, a final action on the project proposal. The responsibility for that decision rests with the State of Washington Department of Ecology through the regulatory review process. The issue of seismic risk, based on the SEIS and other available research and analyses, will be one of the many factors weighed by the state in its final decision.

Comment 3

GSX-US and its contractors have evaluated the proposed shore crossing in great detail and have concluded that the shore approach and the subsequent crossing of the Cherry Point Aquatic Reserve using the HDD method has a probability of success of nearly 100%. This has been documented in several ways as indicated below:

- Jacques Whitford & Associates (JWA) of Vancouver British Columbia, prepared a detailed site-specific geotechnical investigation for the Cherry Point shore crossing ("Geotechnical Investigation, Georgia Strait Crossing, Cherry Point Shoreline Crossing, Washington State", July 25, 2001). The investigation included field coring on the site as well as the follow up geotechnical engineering required to fully analyze the location for the proposed pipeline installation using the HDD method. The report concluded: "For the recommended profile shown on Drawing 2, we estimate a probability of almost 100% for the HDD installation being successful."

- Bids were requested and received from the premier horizontal directional drill contractors in North America. The contractors conducted site visits and tendered proposals to do the work indicating their confidence in success of the HDD method for the GSX-US shore crossing at Cherry Point.

In addition to the above, even more documentation is available indicating the probable success of an HDD at Cherry Point. The HDD method of pipeline installation across environmentally sensitive areas has been utilized on thousands of occasions all over North America and around the world to cross rivers, streams, wetlands, and shorelines. Two recent such examples are:

- In 2002 and 2003 the HDD method was used to install two 30-inch diameter and one 24-inch diameter pipeline shore crossings for the Algonquin Transmission Company's HubLine Project recently installed off the coast of Massachusetts near Boston. Impacts to the near shore environments were minimized during installation by using the HDD method. The 30-inch crossings are approximately 3,000 to 5,000 feet in length, respectively. The 24-inch crossing is approximately 2,400 feet in length. That project encountered engineering,

construction, and environmental conditions similar to those to be addressed for the GSX-US Cherry Point shoreline HDD crossing.

- In 2002, a 36-inch high pressure natural gas pipeline shore crossing was completed for the Gulfstream Pipeline System in Florida. The crossing was 36 inches in diameter and approximately 4,700 feet long. The HDD resulted in minimal impact to an environmentally sensitive near shore area.

In summary, the HDD method is the best way to cross any environmentally sensitive area including the Cherry Point State Aquatic Reserve. GSX-US is utilizing the premier geotechnical engineering, engineering design, and construction firms in the industry to design and install the proposed HDD crossing.

Comment 4

The effects of sediment releases during construction and in the event of a pipeline rupture were described on pages 3-36, 3-72, 3-73, 3-85 and 3-86 of the FERC Final EIS. References are included in Appendix M of the FERC Final EIS.

Comment 5

The impact to tribal fisheries was not one of the issues included in the scope of the Draft SEIS because Ecology determined it had been adequately addressed in the FERC EIS. Substantial Native American consultation was undertaken during the FERC process and is documented in Section 3.10 of the FERC Final EIS. A Traditional Use Study for the Sencot'en Alliance dated June 27, 2002 and was filed by GSX-US-Canada as a confidential document with National Energy Board (NEB). The Alliance subsequently withdrew from the NEB proceedings.

Comment 6

Comment noted.

Comment 7

Comment noted. A final determination will be made by Ecology on the extent of the project's compliance with the policies and regulations in the federal Coastal Zone Management Act and the state's Shoreline Management Act.

ORG-5

Comment 1

Your recommendation regarding public access to the shoreline is noted.

ORG-6

Comment 1

It is not the purpose of the SEIS to recommend, or conclude, that one alternative is or is not superior to another. That judgement will rest with the State of Washington Department of Ecology after a fair and objective review of the analyses, and will be one of many considerations by Ecology as part of the regulatory review process.

Comment 2

Comment noted. Please refer to Section 3.6 of the Draft SEIS for an updated discussion of pipeline safety measures.

Comment 3

Comment noted.

Comment 4

Please refer to Letter IND-5, Comment 2 for a summary of the upcoming Canadian evaluation under the Call for Tenders.

Comment 5

Please refer to Section 2 of the Draft SEIS for a description of the Canadian alternatives.

Comment 6

Refer to comment 4.

Comment 7

Please refer to Section 2 of the Draft SEIS for a description of the updated Terasen Gas (formerly Centra) alternative.

Comment 8

Comment noted.

Comment 9

See Letter SA-1, Comment 5. Further, since the WUTC submitted comments on the FERC Draft EIS, they have (in verbal discussions with GSX-US and Ecology), withdrawn all of their recommendations except for numbers 2 and 4 (as numbered in the Re Sources comments). GSX-US did not rebuke item 4 as suggested but, as stated in the Draft SEIS, committed to running a

baseline caliper pig. Further, GSX-US is committed to applying a Risk Management Process (RMP) as part of a systematic and comprehensive Integrity Management Plan (IMP) to reduce the risk of pipeline failure. The process will include the use of an Integrity Assessment Program to assist in developing proper intervals and plans for internal inspections and other maintenance activities.

Comment 10

Because the comment focuses on the FERC Final EIS, it is outside the scope established by Ecology for the Draft SEIS. However, the intent of the Draft SEIS was to give more consideration to the Canadian project alternatives.

Comment 11

Because the comment focuses on the FERC Final EIS, it is outside the scope established by Ecology for the Draft SEIS. The project proponent has recently filed an Application for Permit with the U.S. Army Corps of Engineers for review under Section 10 of the Rivers and Harbors Act, and Section 404 of the Clean Water Act (Reference Number 200301064).

Comment 12

Because the comment focuses on the FERC Final EIS, it is outside the scope established by Ecology for the Draft SEIS. The seismic issue identified as a part of that scope is discussed in Section 3.2.2 of the Draft SEIS.

Comment 13

Comment noted.

Comment 14

Comment noted.

Comment 15

Because the comment focuses on the FERC Final EIS, it is outside the scope established by Ecology for the Draft SEIS. The issues identified as a part of that scope for nearshore habitat are discussed in Sections 3.3 and 3.5 of the Draft SEIS.

Comment 16

A discussion of the volume and dispersal of sediment from the glory hole is discussed in Section 3.2.2 of the FERC Final EIS. The FERC Final EIS also concludes the sediment is not contaminated with heavy metals or organic compounds (Ecology 1999). Contaminated sediments are also discussed on page 3-34 of the FERC Final EIS. That analysis concluded that the GSX-US project poses little risk of resuspending contaminated sediment.

Comment 17

Because the comment focuses on the FERC Final EIS, it is outside the scope established by Ecology for the Draft SEIS. The fisheries-related issue identified as a part of that scope is discussed in Section 3.5.4 of the Draft SEIS.

Comment 18

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 19

Comment noted.

ORG-7

Comment 1

Comment noted.

Comment 2

Comment noted. Geomagnetic cues are outside the scope of issues identified by Ecology for the Draft SEIS.

Comment 3

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 4

The consideration of impacts to bald eagles in the Draft SEIS was limited to the Bald Eagle Management Plan, which is discussed in Section 3.5.9.

Comment 5

Copies of documents referenced in the Draft SEIS are available for review at the Department of Ecology's Northwest Regional Office (3190 160th Avenue SE, Bellevue, WA 98008). The Draft and Final SEIS documents are available for review or download online at www.ecy.wa.gov/programs/sea/gsx/; at Ecology offices in Bellingham and Bellevue; at libraries in Bellingham, Blaine, Ferndale, and Lynden; and at the B.C. city libraries of Ocean Park and White Rock.

SA-1

Comment 1

Comment noted. The issue of project purpose and need received considerable attention during preparation of the Draft SEIS.

Comment 2

Refer to Letter IND-5, Comment 2.

Comment 3

Note that Plants and Animals Issue 2 is now Issue 16: Non-Listed Federal and State Species. Ecology considers the reference to the Resource Report and the cited studies to be sufficient in response to the issue.

Comment 4

Note that Plants and Animals Issue 7 is now Issue 21: HDD Impacts to Marine Plants and Animals. Ecology considers the reference to the Resource Report and the cited studies to be sufficient in response to the issue.

Comment 5

Note that Reliability and Safety Issue 1 is now Issue 25: Pipeline Protection Measures. Local operations personnel based in Sumas, Washington will be available 24 hours/day, 7 days/week, 365 days/year to operate the pipeline and respond as necessary. In the event of a leak, the response time would depend on the nature and location of the leak, and the location of the nearest operations personnel at the time of the event. Likewise, the time that it would take to stop or react to an upland leak or an offshore leak would depend on the nature of the leak and the time required to identify the leak. The time required to identify a leak would depend on the size of the leak. Larger leaks could be identified very quickly, and remote valves could be closed or operations personnel could respond quickly to close manual valves to isolate the leak as necessary. Smaller leaks are more difficult to identify and, therefore, identification could take longer.

Underwater valves are not proposed for the marine section due to maintenance difficulties, and the inability to "blow-down" the valve once a section is isolated. If necessary, GSX-US would prefer to vent gas from the marine pipeline to the atmosphere at an aboveground valve rather than in the marine environment. Therefore, GSX-US proposes valves each end of the marine section to allow isolation of the marine pipeline and venting to the atmosphere, if necessary.

A full severing of the marine pipeline could require up to nine (9) hours to evacuate the entire marine section (see Letter IND-9, Comment 6). However, as discussed in the FERC Final EIS (Sections 3.3.3.2, 3.6.2 and 3.7.1), the impacts of an offshore release would likely be limited to

localized increases in turbidity due to temporary scour of sediment. Further, methane is a natural and common molecular component of seawater and benthic sediments in the project area. Residual methane dissolved in seawater as a result of a line break would represent a minor incremental change in water chemistry and quality. Potential impacts of methane are discussed on page 3-72 of the FERC Final EIS.

The design and required safety standards for the GSX-US pipeline are under the jurisdiction of the U.S. Department of Transportation's Office of Pipeline Safety (OPS). While the Washington Utilities and Transportation Commission (WUTC) serves as an agent for OPS (to inspect pipelines for compliance with 49 CFR 192), their comments on the FERC Final EIS were submitted in their role as an intervenor and not as an agent for OPS. The WUTC has no authority to impose standards that vary from the applicable portions of 49 CFR 192. As discussed in more detail in the response to Letter ORG-6, Comment 9, only one of the WUTC's recommendations was rejected. Odorization of the gas in the GSX-US pipeline is not required. Other means to identify and avoid leaks and hazards that are accepted industry practice, in addition to the leak detection system, will be implemented.

Comment 6

Note that Air Quality Issue 1 is now Issue 37: Wind Patterns. A cumulative wind rose for the 7-year period from 1995 to 2001 at Cherry Point has been included in Section 3.11 of this Final SEIS. The GSX-US pipeline will transport only methane, which is exempt from NWAPA air quality permitting regulations for natural gas venting/blowdowns (NWAPA Sections 300.4 and 300.5). However, any scheduled or unscheduled blowdowns from a mainline valve would be subject to NWAPA's general nuisance regulations. Therefore, GSX-US would be required to address any nuisance issues (odor, noise) resulting from venting with affected landowners. On the other hand, the Cherry Point Compressor Station is subject to NWAPA air quality permitting regulations and is currently under State review.

Comment 7

Note that Air Quality Issue 2 is now Issue 38: Dispersion Mapping. This issue is outside the scope of the issues identified by Ecology for the Draft SEIS. Cumulative impacts were assessed in Section 3.14 of the FERC Final EIS. This issue focused on the specific need for dispersion modeling. Ecology is satisfied with use of the PSD threshold to determine if dispersion modeling is required. Please refer to Letter LA-2, Comment 2, which summarizes the proponent's current efforts at dispersion modeling.

SA-2

Comment 1

Ecology anticipates that any requirements specific to DNR policy for impacts to state-owned lands would be administered through the Aquatic Land Lease for the GSX-US project.

Comment 2

While the adequacy of the FERC Final EIS has been appealed, it has not been found to be inadequate. If the FERC Final EIS is determined to be inadequate, the lead agency (FERC) would be responsible for addressing the inadequacy. The fact sheet in the Draft SEIS appropriately stated that the FERC Final EIS was the subject of an appeal, as specified in WAC 197–11–630(5).

Comment 3

See Letter IND-5, Comment 2. The applicant is not barred from seeking approvals based on a speculative need for the GSX-US pipeline. Canada's National Energy Board (NEB) recently approved the Canadian portion of GSX-US, conditioned on the approval of VIGP by the BCUC. See NEB Website: https://www.neb-one.gc.ca/newsroom/releases/nr2003/nr0328_e.htm.

Comment 4

Under the SEPA Rules (WAC 197–11–440) not all of the alternatives need be presented in an equivalent detail, nor is a matrix required. However, the FERC Final EIS already contains information and analysis related to the alternatives identified for updating or additional analysis in the SEIS. The Terasen Gas alternative is an update of the original Centra alternative discussed in the FERC Final EIS. The No Action alternative was also analyzed in the FERC Final EIS. However, the NorskeCanada proposal was not included in that analysis.

Comment 5

Please keep in mind that the Draft SEIS is a Supplemental EIS and is not intended as a "stand-alone" document. The Draft SEIS summarizes and references appropriate sources of information that were not included in the FERC Final EIS. The distribution list for FERC Final EIS indicates that DNR received five (5) copies of the document. In addition, the FERC Final EIS was made available in both electronic and hard copy format.

Comment 6

The analysis of land ownership is outside the scope of the issues identified by Ecology for the Draft SEIS.

Comment 7

The Draft SEIS refers to a condition of the Federal Energy Regulatory Commission's (FERC) Certificate of Public Convenience and Necessity (CPCN) that requires GSX-US to complete a post-construction survey to assess any impacts to marine vegetation from drilling mud. This CPCN requirement does not address specific measures for the prevention of a drilling mud release. Rather, in the event any impacts are observed, GSX-US is required to develop a plan in consultation with WDNR, WDFW, NOAA Fisheries and other applicable agencies to mitigate observed impacts.

Comment 8

Figure 3-1 has been revised for this Final EIS.

Comment 9

Note that Geology and Soils Issue 1 is now Issue 4: Active Earthquake Faults. Sections 3.1 and 3.2 of the FERC Final EIS discuss the onshore and offshore sediments for the U.S. portion of the project, and the potential impacts resulting from a seismic event. It includes a discussion of the geologic conditions at Cherry Point with respect to GSX-US' proposed HDD at that location. In addition to Cherry Point, the applicant proposes to use the HDD method at eight stream crossing locations. The applicant has completed detailed geotechnical studies for each of the proposed HDD locations. The studies determined that only one fault, the Sumas Fault at about MP 6.4, is located in proximity to an HDD site (Johnson Creek at MP 6.3). In the event the initial HDD is unsuccessful, the applicant would implement the measures described in the response to Letter SA-2, Comment 19 and Comment 24.

Comment 10

A description of marine vegetation at both Cherry Point and Gulf Road is provided in Section 3.4.4 of the FERC Final EIS and a discussion of the herring spawn off Cherry Point is provided on pages 3-71 and 3-72. Because in-water work would be timed to avoid the herring spawn, no impacts are anticipated.

The pipeline would be installed using the HDD method from approximately 900 feet landward of the bluff at Cherry Point to a point about 3,300 feet offshore at –130 feet MLLW. The majority of commercially and recreationally important marine invertebrate species are located at depths of less than 100 feet. Because the pipe would be directionally drilled well below the surface, there is little potential for scour.

There are a total of six (6) mainline valves on the GSX-US pipeline between Sumas and Cherry Point. All mainline valves are located so that there are multiple access points from established roads. The intermediate mainline valves will not be remotely operated from Salt Lake City, Utah. However, through the SCADA system, operators in Salt Lake City will be able to remotely monitor (upstream & downstream pressure, valve open/close/mid) and close the mainline valves at the Sumas and Cherry Point compressor stations. These mainline valves will be supplied with

AC electric service with backup DC battery systems. Communications will be handled through a microwave system with backup landline facilities. For further discussion of the mainline valves and response, refer to Section 3.6.2 of the Draft SEIS.

Comment 11

The pipeline will be partially trenched into the marine sediments for the first 4.8 miles (approximately) running westward starting from the HDD exit point about 3,170 feet offshore of Cherry Point in about 134 feet of water depth. The benthic biota are typical marine soft bottom organisms that could readily re-colonize a disturbed area. A rupture of the buried marine pipeline under the DNR Cherry Point Aquatic Reserve could cause sedimentation and anoxic conditions resulting in disturbance or death to the Cherry Point herring, juvenile salmonids, and other organisms, if present.

Comment 12

Impacts of a ruptured pipeline to fish and shellfish is outside the scope of issues identified by Ecology for the Draft SEIS. However, this issue was addressed in the FERC Final EIS Sections 3.5.2 (marine mammals), 3.6.1 (fish), and 3.7.1 (invertebrates).

Comment 13

Comment noted. Emergency scenarios were addressed in Section 3.13 of the FERC Final EIS.

Comment 14

As stated on page 3.2-3 of the Draft SEIS, there were no analyses of potential seismic impacts available for the Terasen Gas alternative.

Comment 15

Note that Geology and Soils Issue 2 is now Issue 5: Potential Scour Impacts. The method used to calculate the estimated scour is explained in Section 3.2.3 of the Draft SEIS.

Comment 16

As stated on page 3.2-3 of the Draft SEIS, there were no analyses of potential scour impacts available for the Terasen Gas alternative.

Comment 17

Note that Surface Water Issue 1 is now Issue 6: Impaired Waterbodies. Waterbodies that may be affected are described under “Impacts – Proposed Action”, and includes the list of 303d waters in Table 3.3-1.

Comment 18

See Comment 17.

Comment 19

As stated in Section 3.3.7 of the Draft SEIS: "There is not a hard and fast rule for the number of times an HDD or conventional bore is attempted before the decision is made to use an alternate method. Factors that may be considered in this decision are the specific cause of the failure and the soil conditions encountered.

For example, the corrective measure may involve a determination that the existing hole encountered a void, which could be bypassed with a slight change in the profile. In other cases, it may be determined that the existing hole encountered a zone of unsatisfactory soil material and the hole may have to be abandoned. In this case, it may be possible to use an alternate adjacent alignment contained in the right-of-way to drill a new hole."

In most instances, it is not practical to move to a more distant location for another attempt as alignment changes much greater than this would require route revisions on adjacent landowners. Therefore, all potential impacts should be limited to one site contained within the right-of-way and approved temporary workspace.

Comment 20

Ecology determined that no further consideration of potential significant unavoidable adverse impacts was required for this issue.

Comment 21

WDFW will be involved in each stream crossing action to ensure that fish protection measures are tailored and in place for each specific area. As a general rule, stream crossing work will be performed in the drier time of the year when it is determined that there are the least potential impacts to both adult and juvenile salmonids. The "flume" type crossing method provides a conduit for the stream to flow across the construction area while the trench is tunneled under and perpendicularly adjacent to the flume. Routing the stream out of the streamway, as suggested by the reviewer, is problematic due to potential bank and riparian disturbances.

Comment 22

Specific construction techniques for the Terasen Gas alternative have not been identified.

Comment 23

In-water work would be conducted during periods that avoid impacts to both herring eggs and the herring themselves (see page 3-70 of the FERC Final EIS). Therefore, impacts to herring

eggs are not anticipated. Impacts to marine invertebrates are discussed on pages 3-83 to 3-88 of the FERC Final EIS.

Comment 24

Note that Surface Water Issue 3 is now Issue 8: Open Cut Alternative. Geotechnical studies conducted for HDD or conventional bore stream crossing locations indicate a very high probability of success. Discussions with pipeline contractors experienced with the technique further support the feasibility of proposed stream crossing methods.

The applicant has prepared a contingency plan for an open cut crossing in the event of an unsuccessful HDD or bore. The plan is contained in Section 5.3 – Contingency Crossing Methods of GSX-US's Wetland and Riparian Restoration Plan (June 2003). The contingency plan states (in part):

> "If, however, a proposed trenchless crossing is not successful, GSX-US will implement the following procedure:
>
> - Attempt additional drill(s) or bore(s).
>
> - If an HDD fails, evaluate the feasibility of completing the crossing using a CB.
>
> - If neither an HDD nor CB is feasible, the conditions contained in FERC Mitigation Measure No. 12 will be addressed and an open cut dry-flume (OCD) crossing will be installed.
>
> - GSX-US will prepare and implement a site-specific crossing plan comparable to those contained in DETAIL A-2. Since there will be additional disturbance to the stream bed and riparian zone resulting from an open cut, GSX-US will consult with involved regulatory agencies to determine the location and extent of any additional compensatory mitigation that may be necessary."

DETAIL A-2, referenced above, identifies timing constraints, erosion control, dewatering, equipment crossing method, bank reestablishment, substrate replacement, topsoil salvage and redistribution, decompaction, seedbed preparation, seeding method and mixture, tree/shrub planting, woody debris installation and buffer establishment.

Comment 25

Note that Surface Water Issue 4 is now Issue 9: Wet Ditch/Dry Ditch Methods. See the response to Comment 21. Since the larger streams will all be bored underneath to avoid related trenching impacts, the smaller streams should be readily capable of being crossed by the proposed method with minimal impact.

Comment 26

Note that Surface Water Issue 4 is now Issue 9: Wet Ditch/Dry Ditch Methods. Comment noted.

Comment 27

The use of clean gravel was recommended to minimize sedimentation in fish-bearing and 303(d) streams. The applicant has prepared a lengthy Wetland and Riparian Restoration Plan (June 2003) outlining mitigation for each crossing. The plan is summarized in Section 3.5.6 of the Draft SEIS. The size of the Draft SEIS and number of streams crossed precluded a discussion of mitigation at each stream crossing. Regulatory agencies are currently reviewing the Plan in concert with stream and wetland crossing permits.

Comment 28

Section 3.5.7 of the Draft SEIS contains a summary of the Wetland and Riparian Restoration Plan.

Comment 29

Note that Surface Water Issue 5 is now Issue 10: Equipment Impacts in Waterbodies. The pipeline will be installed using the techniques described in the Draft SEIS and FERC Final EIS. The use of bridges to cross perennial streams is for equipment access only. This prevents equipment traffic from fording perennial streams. A table of each waterbody and proposed crossing method is provided in the FERC Final EIS, Appendix I, Table I-1.

Comment 30

The applicant will install the pipeline using the HDD method at the specified locations, unless that method fails.

Comment 31

Note that Surface Water Issue 6 is now Issue 11: Open Cut Crossing Impacts. The flume crossing method is a form of open cut that isolates stream flow from the trench using sand bags and culverts so that sedimentation and turbidity are minimized. Therefore, it is often referred to as dry-ditch method. The “conventional” open cut method also uses a trench but does not isolate stream flow from the trench. The “conventional” open cut method is only proposed for crossings that are dry or non-fish bearing. Bridges are only used for equipment access so that streams are not forded. All stream crossing methods were determined though consultation with appropriate regulatory agencies.

Comment 32

For pipe installed using the flume method, the area that requires dewatering is located between the upstream and downstream sandbag dams. Typically, there is a finite amount of water since it

is contained by the dams. However, for pipe installed using a bore method, bore pits are required on both sides of the stream to accommodate the equipment necessary to complete the installation. Therefore, these pits must be kept dry for the safety of personnel and equipment. Typically, water continues to follow natural underground drainage patterns and flows into the pits, requiring frequent pumping and dewatering.

Comment 33

The applicant is required to maintain adequate flow rates to protect aquatic life, and prevent the interruption of existing downstream uses. Measures to maintain flow rates are described in Appendix D of the FERC Final EIS.

Comment 34

Note that Surface Water Issue 7 is now Issue 12: Hydrostatic Water Test Discharge. Although there are no on-site conditions that indicate the hydrostatic test dewatering site would be relocated, the applicant is required by FERC and other agencies to mitigate any and all disturbances associated with the project. Mitigation measures included in Section 3.3.8 of the Draft SEIS and those included in the FERC Final EIS (Upland Erosion Control, Revegetation and Maintenance Plan and Wetland and Waterbody Construction and Mitigation Procedures) would be implemented for the proposed and any alternative hydrostatic test water discharges sites.

Comment 35

Other potential dewatering sites would be located in the same vicinity (i.e. near the Cherry Point compressor station) as the proposed dewatering location. The exact location would be determined based on an evaluation of site conditions during construction. GSX-US would not locate the dewatering site in any wetlands or sensitive waterbodies.

Comment 36

See Comment 5.

Comment 37

Impacts to fish from sediment are discussed in Section 3.6.2, page 3-69 of the FERC Final EIS. The timing of construction, short duration of increased sedimentation, and localized areas of turbidity are unlikely to result in significant impacts to migrating fish.

Comment 38

No compensatory mitigation has been proposed due to the minimal, localized and temporary nature of impacts.

Comment 39

See responses to Comments 23 and 41.

Comment 40

Moderate to high levels of sediment may impact fish or invertebrate species, however it is unlikely that the sediment levels or extent of sedimentation produced by construction of the GSX-US pipeline would significantly affect these species. This assessment is based on reports quantifying sediment quantities and dispersion for the project. These include:

Hodgins, D.O., S.L.M. Hodgins and B.N. Lea. 2001 (July). Georgia Strait Crossing Project: sediment plume dispersion modeling study. Seaconsult Marine Research Ltd., Vancouver, British Columbia. 33 pp. plus appendices.

Hodgins, D.O. 2001 (July). Dispersion of drilling fluids in the Strait of Georgia. Letter report to R. Glaholt, Tera Environmental Consultants Ltd. from Seaconsult Marine Research Ltd., Vancouver, British Columbia. 6 pp.

Hodgins, D.O. 2001 (August). Georgia Strait Crossing Project: pipeline trench infilling study. Seaconsult Marine Research Ltd., Vancouver, British Columbia. 6 pp.

Hodgins, D.O. 2002 (March). Impact area associated with drilling mud and cuttings at the HDD. Letter report to R. Glaholt, Tera Environmental Consultants Ltd. From Seaconsult Marine Research Ltd., Vancouver, British Columbia. 3 pp.

Comment 41

See response Comment 40. The amount and dispersion of sediment is very unlikely to cause salmon to divert to non-natal streams, especially since mouths of spawning streams are substantially removed from potential sediment sources in the Strait of Georgia. Salmon spawning streams crossed by the project will be crossed by trenchless methods or will be crossed during non-spawning time windows imposed by WDFW.

Comment 42

Ecology considers the reference to the Resource Report and the cited studies to be sufficient in response to the issue.

Comment 43

Note that Plants and Animals Issue 2 is now Issue 16: Non-Listed Federal and State Species. The discussion of impacts and mitigation to fish, mollusks and other aquatic species is addressed in various sections of the FERC Final EIS. However, Ecology concluded the Draft SEIS should provide appropriate references to the reports used to support the conclusions stated in the FERC Final EIS.

Comment 44

Note that Plants and Animals Issue 4 is now Issue 18: Noxious Weeds/Invasive Species. Ecology considers the reference to the Resource Report and the cited studies to be sufficient in response to the issue.

Comment 45

Note that Plants and Animals Issue 6 is now Issue 20: Wetland Mitigation Plan. The original Cherry Point Compressor Station site (GSX-US FERC Filing, April 2001) was relocated approximately 200 feet to the east (toward Jackson Road) and is reflected in GSX-US's Supplemental filing to FERC in October 2001. GSX-US must to use the current site as a condition of FERC's approval. Both sites are in a hay meadow.

Comment 46

Ecology considers the summary of the Wetland and Riparian Restoration Plan presented in Section 3.5.7 to be adequate. The full plan is available by contacting Ecology's Northwest Regional Office.

Comment 47

Staff from other local, state, and federal agencies were solicited for their comments concerning wetland impacts and related mitigation. A more specific response is not possible as no specific agencies or requirements were cited.

Comment 48

Note that Plants and Animals Issue 7 is now Issue 21: HDD Impacts to Marine Plants and Animals. As noted on page 3.5-16 of the Draft SEIS, the FERC Final EIS provided an analysis on page 3-83 and Appendix 3-1 of Resource Report 3.

Comment 49

The only eelgrass beds on the U.S. portion of the proposal are located along Cherry Point in the shallow nearshore, typically less than 15 feet deep (MLLW). The pipeline is proposed to enter the ground approximately 900 feet inland of the bluff face and run underground under the marine nearshore approximately 3,170 feet to a point where it will exit the bottom in about 134 feet of water. This HDD method avoids the eelgrass impacts associated with trenching.

Comment 50

The viscosifier agent, if used, will be a polymer that is both inert and non-toxic and would be used in very small amounts.

Comment 51

See response to Comment 40. The spoil from both trenching operations and dredging at the HDD glory hole will be disposed adjacent to the trench and glory hole. Studies commissioned by GSX-US indicate that there will not be significant dispersion of displaced soil.

Comment 52

Note that Plants and Animals Issue 7 is now Issue 21: HDD Impacts to Marine Plants and Animals. We agree that consultation for mitigation should be a precursor to authorization and encourage agencies with jurisdiction to do so. As a general rule, impacts that have been identified during the entire environmental review process (NEPA/SEPA) and that cannot be avoided or prevented will be addressed as conditions of the state permit/lease system including, but not limited to, shoreline permits, Section 401 Certification, and DNR bottomland leases.

Comment 53

In contrast to the Canadian landfall, a trenching or partial trenching method to cross the Cherry Point bluff and adjacent DNR Aquatic Reserve is no longer proposed and will not be authorized. Multiple attempts to complete a successful HDD bore from the area upland of the bluff may be required until a satisfactory result is achieved. Varying depths, directions and angles of approach to the shoreline may be required to complete the work. Additional detailed environmental management plans may be required, if necessary, to compliment permit conditions and requirements.

Comment 54

Note that Plants and Animals Issue 9 is now Issue 23: Forest Fragmentation. Comment noted.

Comment 55

Comment noted.

Comment 56

Note that Reliability and Safety Issue 1 is now Issue 25: Pipeline Protection Measures. Section 3.6.1 is common to all issues in the Draft SEIS that is included as a courtesy to the reader. It summarizes other sources of information and analyses relevant to the issues that are available for review. Ecology considers the updated summary of pipeline safety measures to be adequate in responding to the issue.

Comment 57

The final SCADA system design will be completed after construction so that it can be properly calibrated for actual operating parameters.

Comment 58

Note that Land and Shoreline Use Issue 1 is now Issue 26: Consistency with Plans and Policies. Section 3.7.2 of this Final SEIS has been revised to include a discussion of the proposed DNR Aquatic Reserve at Cherry Point.

Comment 59

The HDD method would obviate the potential impacts associated with excavating an enormous trench through the high bank Cherry Point shoreline.

Comment 60

Comment noted.

Comment 61

See Comment 58.

LA-1

Comment 1
The commenter does not identify a public access impact that would require such a condition. However, the project proponent could conceivably provide public access as a general amenity regardless of whether an impact is identified under SEPA.

LA-2

Comment 1

Comment noted. The list of permits in this Final SEIS has been amended to include the Order of Approval permit.

Comment 2

Note that Air Quality Issue 2 is now Issue 38: Dispersion Mapping. Comment noted.

LA-3

Comment 1

The tap valve requested by OPALCO is included in the project and would be installed during installation of the pipeline.

Comment 2

Note that Geology and Soils Issue 1 is now Issue 4: Active Earthquake Faults. See Letter IND-11, Comment 5.

Comment 3

Note that Reliability and Safety Issue 1 is now Issue 25: Pipeline Protection Measures. Sharing of pipeline safety reports and notices with local government could provide additional transparency to the system by which the safety of pipelines is ensured. An additional mitigation measure to that effect will be added to Section 3.6.

Comment 4

Note that Plants and Animals Issue 8 is now Issue 22: Measures to Protect Bald Eagles. The specific focus of Section 3.5.9 in the Draft SEIS was a summary of previous studies of raptors and the WDFW Bald Eagle Management Plan. Extent of bald eagle habitat throughout the project area was acknowledged and documented in Sections 3.5 and 3.8 of the FERC Final EIS.

Comment 5

Note that Land and Shoreline Use Issue 1 is now Issue 26: Consistency with Plans and Policies. Section 3.7.2 of this Final SEIS has been revised with additional discussion of applicable policies from the San Juan County Comprehensive Plan and Shoreline Master Program.

Comment 6

Note that Noise Issue 1 is now Issue 39: Noise Abatement Measures. Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (*e.g.*, orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

FA-1

Comment 1

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 2

See Comment 1, above.

AP-1

Comment 1

Comment noted. The NorskeCanada proposal was included under No Action because Ecology believes it could be a viable alternative if the GSX-US pipeline is not constructed.

Comment 2

Comment noted.

Comment 3

Comment noted.

Comment 4

Comment noted. Ecology does not intend to alter the process for SEPA compliance and regulatory review of the GSX-US project because of the BCUC ruling.

Comment 5

In responding to the comments received on the Draft SEIS, Ecology will have to determine if an issue is addressed in the FERC Final EIS or the SEIS. Where appropriate, the comment response will refer to the location in the FERC Final EIS where an issue was address. If an issue is identified by a commenter that is not addressed in either document, Ecology will need to determine if the issue is significant enough to warrant additional analysis in the FSEIS.

Comment 6

Your comment is not consistent with findings of the BCUC in its September 8, 2003 ruling. For example, on page 46 of the ruling it states "Since VIEC considers that VIGP and GSX-US are closely linked, and that GSX-US is the preferred transportation option, it is appropriate to evaluate VIGP on the basis of GSX-US transportation. The Commission Panel accepts that GSX-US likely would transport gas for ICP as well as VIGP. To reflect the GSX-US tolls that would apply to VIEC for gas transportation service to VIGP, the Commission Panel concludes that 50 percent of GSX-US charges should be used in the lower cost scenario for the cost of service analysis of VIGP" (Source: BCUC Decision, September 8, 2003).

Comment 7

Your disagreement with the findings in the Easterbrook et al. paper regarding the Sumas and Vedder Mountain faults is noted.

Comment 8

This is standard language in a SEPA Determination of Significance that initiates the EIS process. The emphasis in the language is on the *potential* for significant impacts that necessitates the environmental review. It does not mean that the lead agency has determined conclusively that significant environmental impacts have been identified.

Comment 9

In Section 1.1.1 of this Final EIS, the date of issuance of the FERC Final EIS has been changed to July 17, 2002.

Comment 10

This sentence in Section 1.1.1 has been revised.

Comment 11

The second sentence in Section 1.2.2 has been revised and the pipeline mileage has been changed to 45.3 miles.

Comment 12

Section 1.3 has been revised to reference the correct sections of the Final EIS.

Comment 13

Note that Project Description Issue 3 is now Issue 3: Canadian Project Alternatives. Ecology does not agree that this revision is necessary.

Comment 14

Note that Surface Water Issue 5 is now Issue 10: Equipment Impacts in Waterbodies. The language on page 1-5 has been revised.

Comment 15

Note that Plants and Animals Issue 3 is now Issue 17: Impacts to Fisheries. The reference on page 1-6 has been changed to Section 3.5.4.

Comment 16

Note that Plants and Animals Issue 8 is now Issue 22: Measures to Protect Bald Eagles. Comment noted.

Comment 17

The text in Section 2.1.1 has been revised.

Comment 18

The text in Section 2.2.2 has been revised.

Comment 19

The text in Section 2.2.2 has been revised.

Comment 20

The text in Section 2.3.2 has been revised.

Comment 21

Comment noted.

Comment 22

The Final EIS text references Williams Gas Pipeline Company.

Comment 23

Ecology does not agree that this revision is necessary.

PH-1

Comment 1

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 2

Comment noted.

Comment 3

See Comment 1, above.

Comment 4

A discussion of the volume and dispersal of sediment is contained in Section 3.2.2 of the FERC Final EIS. The FERC Final EIS concludes the sediment is not contaminated with heavy metals or organic compounds (Ecology 1999). The analysis on page 3-34 of the FERC Final EIS concludes that the GSX-US project poses little risk of resuspending contaminated sediment. A brief discussion of potential impacts to fish and killer whales from PCBs is provided below (from comments of J.A. Jefferey Thompson, Ph.D. to testimony of David Bain during the NEB process).

Resettling begins immediately, with the heaviest particles (sand, gravel) the first to re-enter the sediment column. These are followed in a matter of minutes to hours by the finer material. Upon resuspension, there is a theoretical amount of material released from the sediment pore water and from the particles via desorption. Because of the low polarity of these compounds, they are hydrophobic and tend to adhere to particulate rather than go into solution. This tendency to adhere is represented by a partition (sorption) coefficient that varies for each of the several PCBs. These values are calculated from model experiments and show that their tendency is to either remain adhered to fine sediments, or to be re-adsorbed rapidly from the water column. In no way could a release of the total PCB content of the sediment bed occur. That fraction of contaminant remaining in solution would undergo rapid dilution in the water column to undetectable concentrations and no significant amounts would be introduced to fishes.

The potential for uptake of the low quantities of PCB's released in the pipeline corridor by killer whales is negligible. The southern resident killer whales spend about 2 percent of their time in the pipeline corridor. Diet is the overwhelming source of PCBs in killer whales (Ross et al, 2000). For southern resident killer whales, salmonids constitute 92% of the diet with the

preferred species, chinook salmon, comprising 62% of the total food intake (Grant and Ross, 2002). Research has shown that salmon acquire an overwhelming proportion of their body burden of organochlorine pollutants during their time in the open ocean. For example, chinook salmon acquire approximately 98% of their body burden of PCBs while at sea, primarily from Asian sources (Ross et al., 2002). Therefore, exposure to PCBs associated with particulate in the Strait of Georgia is both an indirect uptake pathway for southern resident killer whales and an insignificant source overall.

Comment 5

There is no one aspect of the GSX-US pipeline that is precedent-setting with regard to installation of a marine pipeline. The pipeline is a viable and safe project that is based on sound and proven engineering and construction practice. Deepwater pipelines are built routinely in all types of environments. Today there are underwater pipelines being installed in excess of 10,000 feet (10 times the maximum depth of the GSX-US pipeline).

The design of the GSX-US pipeline accounts for the currents known to exist in the region. GSX-US conducted numerous current surveys along the marine route and commissioned reports in which the current profiles are fully described and quantified. The local currents, which are largely driven by tides, are regular and predictable.

Detailed stability analysis shows the GSX-US design to be stable. In addition, several world-class marine contractors have reviewed the GSX-US project (technical documents and site visits) and have concluded that the GSX-US pipeline can be safely and successfully installed along the route selected.

Comment 6

The GSX-US pipeline is not proposed to be laid on a mountain top. The routing of the pipeline is actually on a relatively flat area of the ocean floor and designed to avoid the rock structures that protrude above the ocean floor. GSX-US completed a very detailed hydrographic survey encompassing a swath approximately one mile wide over the 42-mile distance between Cherry Point and Vancouver Island. The survey was then used to complete a detailed structural analysis of the proposed pipeline that takes into account all marine slopes and instabilities. Bottom topography was accurately mapped and proven industry standard engineering software was utilized to analyze the pipeline, including detailed spanning and stability analysis. As a result, the current marine route provides for safe and reliable placement of the proposed GSX-US pipeline. The stresses anticipated from the rough marine bathymetry result in very low pipe stresses that are easily accommodated by the robust pipeline design.

Comment 7

See response to Comment 6.

Comment 8

Because installation stresses are well understood the chance of over-stressing the pipeline is very low. Stresses and strains in the pipeline are monitored during construction. Inspectors on board the installation vessel inspect all aspects of the contractor's operations to insure that the pipeline is being constructed as per the specifications. After the pipeline has been installed it is strength tested by bringing the internal pressure up to at least 125% of what will ultimately be the pipeline's maximum allowable operating pressure.

Comment 9

The GSX-US pipeline will be designed, constructed, operated and maintained in accordance with U.S. Department of Transportation Safety Standards (49 CFR 192). An offshore gas pipeline presents minimal risk to the public at large. The GSX-US marine pipeline has a very robust design and the possibility of a severe rupture is extremely remote – should a rupture occur however the risk to the public is extremely low.

Comment 10

See response to Comment 9.

Comment 11

The GSX-US pipeline has been designed to meet and exceed the seismic design requirements of both the US and Canadian codes. GSX-US has performed detailed seismic analysis on the marine pipeline including the possibility of down slope sliding as well as many other design considerations and has concluded that the pipeline design is extremely safe. In addition, the GSX-US pipeline has been routed to avoid those areas where there is a significant risk of seafloor sliding. The pipeline has been designed for a seismic event with a probability of exceedance of one in 475 years as well as a probability of exceedance of one in 2,500 years.

The potential for a vessel to drop an anchor on the pipeline would be the highest in the nearshore area near the BP loading facility at Cherry Point and in the deeper water near Patos Island. The potential for anchor drag is minimal in the near shore area adjacent to Cherry Point. In the nearshore area, the pipeline would be deep enough under the sea bottom (using the HDD method) so that it would not come in contact with an anchor.

Potential for anchor drag in deeper water near Patos Island is not likely because the water in that area is too deep (approximately 600 feet) for anchoring. Most marine vessels (large or small) do not carry enough anchor chain to snag the pipeline at those depths.

Even if the pipeline were snagged, it is designed to be so robust that rupture of the line is unlikely. The pipe wall consists of 0.656 inch think, 60,000 psi steel. Finally, the completed pipeline will be shown on future navigation charts for the area.

Comment 12

Marine pipelines are generally located in areas remote from human population centers, minimizing the risk to human life from rupture or combustion. The GSX-US pipeline would be designed such that the likelihood of gas from a rupture reaching the surface and igniting is very unlikely. GSX-US is not aware of any instance in which a ruptured marine pipeline releasing gas caused a boat to sink due to loss of buoyancy.

In the very unlikely scenario of a pipeline rupture, gas would be released to the surrounding seawater where it would rise to the surface and be released to the atmosphere. In addition, tidal currents would disperse the gas (if the rupture is in deepwater) as it rises to the surface. Natural gas (methane) is not toxic, although it is flammable. The possibility of gas at the surface combusting due to the presence of a vessel is extremely unlikely as natural gas is lighter than air and would continue rising and dissipating into the atmosphere.

Comment 13

Refer to Letter LA-3 for responses to San Juan County comments.

Comment 14

Please refer to Letter IND-5, Comment 2.

Comment 15

Comment noted.

Comment 16

Comment noted.

Comment 17

A decision regarding consistency with the federal Coastal Zone Management Act and state Shoreline Management Act will be made by Ecology. San Juan County's Shoreline Master Program policies were discussed in Section 3.7.2 of the Draft SEIS.

Comment 18

See Comment 1, above.

Comment 19

See Comment 1, above.

Comment 20

See Comment 1, above.

Comment 21

The GSX-US proposal calls for 4.8 miles of the offshore pipeline to be keyed-in or buried. Impacts to marine invertebrates from pipeline installation is described in Section 3.7.2, pages 3-85 and 3-86 of the FERC Final EIS. Impacts to epibenthic fish are described in Section 3.6.2 of the FERC Final EIS.

The stability analysis preformed on the GSX-US marine pipeline concluded that the pipeline would be stable and not move from its as-built configuration. Based on observations of marine pipelines elsewhere in Georgia Strait, it is anticipated the pipeline would be rapidly colonized by marine flora or fauna in areas where it remains exposed. Habitat directly traversed by the pipeline over most of its route is very low suitability for rockfish, and dominated by soft substrate. The overall habitat supply for rockfish would increase slightly as a result of pipeline construction.

Comment 22

Reference to "Artificial Reef" like structures is both appropriate and common language used in the Pacific Northwest as well as in the Gulf of Mexico and around the world. Significant resources have been invested in artificial reefs to create habitat through "Rigs to Reefs" programs and the placing of obsolete naval vessels in areas to create marine habitat. The latter has been practiced on numerous occasions in the Strait of Georgia.

Based on observations of marine pipelines elsewhere in Georgia Strait, it is likely that marine flora or fauna, in areas where the pipeline remains exposed, will rapidly colonize the pipeline. Habitat directly traversed by the pipeline route is, for much of its length, of very low suitability for rockfish and primarily dominated by soft substrate. Overall habitat supply for rockfish will slightly increase as a result of pipeline construction.

Comment 23

See Comment 1, above.

Comment 24

Comment noted.

Comment 25

Comment noted.

Comment 26

Comment noted.

Comment 27

Comment noted.

Comment 28

The pipeline is relatively simple structure that would not create substantial new habitat for any species. The opportunity for new habitat decreases as the trench fills. This is summarized on page 3-72 of the FERC Final EIS.

It is unclear from the comment which species the commentor intended to address. However, the dispersal strategy of most marine invasive species is not dependent on the presence of substrate but rather prevailing circulation patterns which have tended to result in species being found along pretty much the breadth of the Pacific Northwest from Alaska to the Baja. Therefore, the presence of the pipeline is not expected to significantly affect the dispersal of marine invasive species.

Comment 29

See response to Comment 28.

PH-2

Comment 1

See Letter ORG-4, Comment 5. The Lummi Nation submitted comments on the FERC Draft EIS in February of 2001, and Al Scott Johnny of the Lummi Nation cultural department is on FERC's mailing list and received copies of both the Draft and Final FERC EIS.

Comment 2

Comment noted.

Comment 3

Comment noted.

Comment 4

Comment noted. Please refer to Letter IND-5, Comment 2.

Comment 5

Comment noted. Please refer to Letter IND-5, Comment 2.

Comment 6

Comment noted.

Comment 7

Your comment regarding "looping" appears to refer to the Terasen Gas alternative, which calls for looping on segments of its existing pipeline. The Terasen Gas alternative was described in Section 2.3 of the Draft SEIS.

Comment 8

The potential impact of liquefaction was not one of the issues identified by Ecology to be addressed in the Draft SEIS. However, the issue of liquefaction was assessed in considerable detail in Section 3.1 of the FERC Final EIS, and Resource Report 6 – Geological Resources.

Comment 9

The primary purpose of the GSX-US pipeline is to supply natural gas to Vancouver Island. However, in the Cherry Point area, a tap valve would be located in the compressor station yard.

Comment 10

Comment noted.

Comment 11

Please refer to revised Section 3.12 – Noise of this Final SEIS. Both of the supplemental reports support the conclusions in the FERC Final EIS that the GSX-US pipeline would not generate sounds of high enough frequencies and intensities to be audible to toothed whales (e.g., orca or harbor porpoise). Based on Ecology's review of the original and supplemental noise studies and existing noise regulations, and in the absence of other credible research, it cannot conclude that the GSX-US pipeline would result in significant adverse noise impacts to fish or marine mammals.

Comment 12

Comment noted.

Comment 13

The pipeline alignment was established through the FERC process. Therefore, relocation of the project to an alternate location would require FERC approval. Negotiations between individuals and the applicant regarding payment for easements or damages are beyond the scope of the Draft SEIS.

Comment 14

As reported on page 3-97 of the FERC Final EIS, "To further assess the presence of bald eagles in the project area, GSX-US committed to conducting additional surveys during the winter and spring prior to construction." Conducting the surveys in the seasons prior to construction will ensure that the most recent data are available for development of the mitigation plans as required in FERC Condition 26. Therefore, those supplemental surveys will not be conducted until after the SEPA process is concluded.

Potential impacts of construction and operation of the project were assessed on pages 3-97 and 3-98 of the FERC Final EIS, and on page 3-44 of Resource Report 3. That report was used by FERC to develop its discussion of impacts and mitigation in the Final EIS. The stipulations of FERC Condition 26 (which were also included in the Final EIS), ensure that mitigation will be fully evaluated and approved by the appropriate regulatory agencies.

Section 3.5.9 of the Draft SEIS summarized the Bald Eagle Management Plan prepared by WDFW and cites USFWS concurrence that the project may affect, but is not likely to adversely affect, bald eagles.

Comment 15

The proposed crossing method for Tarte Creek was developed in consultation with biologists from WDFW familiar with the fisheries resource of the stream. The USFWS and NOAA Fisheries have provided concurrence letters based on the proposed crossing method.

Comment 16

The valuation of property by Whatcom County for tax purposes is outside the scope of the Draft SEIS.

Comment 17

In Section 3.7, the Draft SEIS acknowledges the project's location within the Cherry Point Urban Growth Area (UGA).

Comment 18

See Letter IND-11, Comment 5.

Comment 19

Comment noted.

Comment 20

Please refer to Letter IND-5, Comment 2.

Comment 21

Comment noted. Potential impacts, and mitigation measures, related to Terrell Creek were addressed in Section 3.3.8 of the Draft SEIS.

Comment 22

Comment noted.